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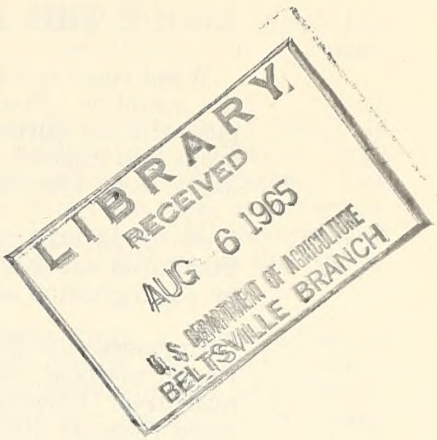


# WEED ROSES ...

## Pests of Pasture, Orchard and Range

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## ABOUT THIS REPORT . . .

Weed roses are a fast developing problem in many parts of the country. Four roses that are showing a strong weed potential by spreading into areas where they compete with crops and impede movement of farm equipment are multiflora, Macartney, Cherokee, and Woods rose.

An important factor in the rapid spread of weed roses is that birds eat the fruit and scatter the seed over a wide area by regurgitation and defecation.

Farmers who find these roses encroaching on their pasture, range, orchard, or woodland need to initiate prompt control measures. Farmers who are considering planting any of the weed roses as "living fences" or wildlife cover are advised to weigh their desirable qualities against their weed potential.

This report describes the various weed roses and methods for controlling them.

Information for this report was provided by the Crops Research Division of the Agricultural Research Service.

# WEED ROSES — PESTS OF PASTURE, ORCHARD, AND RANGE

Like any plant growing where it is not wanted, roses become weeds when they escape control and spread in meadow, range, orchard, or woodland to the detriment of cultivated crops or desired native plants.

Although not major national pests, four roses have become serious weeds to many farmers and stockmen. Without control, they could rapidly overrun large areas. The weed roses and areas in which they are spreading are Macartney rose in southeastern Texas and parts of other Gulf States, Cherokee rose in numerous areas of the Gulf States, multiflora rose in many areas east of the Mississippi, and Woods rose in some sections of the Northwest and higher elevations in the Southwest.

The tendency of weed roses to spread rapidly results from a combination of factors. The roses are prolific producers of viable seed. Birds and other animals eat the rose hips (fruit) and scatter the seed widely by regurgitation and defecation. In addition, both Macartney and Cherokee roses layer readily, contributing to the spread of these species. All weed roses grow back after mowing. And their thorny canes discourage animals from grazing on them.

Weed roses have a number of characteristics which make them obnoxious when out of place. Their thorns make harvesting of orchards, timber, or forage crops difficult and sometimes painful. They compete with more desirable crops for space, soil nutrients, and moisture. They impede the use of machinery for pasture management. They grow around margins of ponds, making access difficult, and tend to clog irrigation canals. Infestations spread rapidly and increase in severity unless controlled. Established stands cannot be controlled by mechanical means alone. They are best controlled with the aid of herbicides, which sometimes cannot be used because they would damage adjacent plants or because they are not cleared for use on food or feed crops.

## CHARACTERISTICS OF THE INDIVIDUAL ROSES

When weed roses invade new areas, they may not be recognized as a potentially serious threat until they have gained a foothold. Unfortunately, it is much more difficult to control infestations after they have become established. Control measures are discussed on pages 3-5.

Here are brief descriptions of the weed roses and how they spread:

### Multiflora Rose

Multiflora rose (*Rosa multiflora* Thunb.) is the most recent addition to the list of roses that sometimes are weeds. Beginning in the early forties, planting of multiflora rose for use as an attractive "living fence" and wildlife cover was started with approval of agricultural leaders. From the viewpoint of some conservationists and farmers, the value of multiflora for these purposes still outweighs its weak characteristics. However, a hedge that one farmer prizes as a border surrounding his cultivated fields could well be a pest to a neighbor whose pasture, orchard, or pond border is becoming infested. And some farmers who planted multiflora fences and were originally pleased with them are finding the control problem greater than anticipated.

A more common approach has been for biologists concerned over multiflora's weed characteristics to recommend that farmers seriously weigh the advantages and disadvantages of the rose before planting it. While recognizing the value of multiflora as a wildlife cover and living fence, scientists warn against using the plant near unmanaged pasture, permanent pasture which cannot be managed with power equipment, open woods primarily managed for timber production, Christmas tree plantings, idle land, or other areas not under management.

Multiflora gets its name from the clusters of many white flowers. The individual flowers range in size from 1 to 1.5 inches in diameter. The leaves commonly have 7 to 9 leaflets. In older hedges the stems sometimes attain a length of 15 feet or more and have a diameter of 8 inches at the base.

Reproduction is chiefly by seeds but some layering may occur under very favorable conditions—that is, when canes become covered by wet soil during the growing season. Multiflora does best in cool sections where the annual rainfall is 30 or more inches. It occurs most frequently in fringe areas between forest and prairie. However, it can grow in open woods.

## Macartney Rose

Macartney rose (*Rosa braceata* Wendl.) is already rated as a major weed problem in Texas although it is still restricted mostly to the southeastern section of the State. Range specialists of the Texas Agricultural and Mechanical University point out that range areas covered by established clumps of roses are a total loss for grazing. Although reclaiming heavily infested grazing land is difficult and expensive, experiments have shown that effective control measures more than pay for themselves in increased productivity. The findings have also emphasized the need for control to prevent spread of a costly range pest which is capable of completely taking over fertile grasslands in a period of 15 to 25 years after initial infestation. Since 1948, the acreage in Texas infested by the Macartney rose has increased twelvefold, from an estimated 40,000 acres to around 500,000.

Macartney rose has rather large, white, five–petalled flowers, measuring from 2 to 3 inches in diameter. Its fruit is longish—from ⅔ to 1 inch in length. This rose grows to form mounds of brush sometimes 20 feet high. More commonly, however, mature plants are around 7 feet high. The leaves usually have from 5 to 11 leaflets.

Macartney is frequently confused with Cherokee rose with which it hybridizes. However, Cherokee rose characteristically has only 3 leaflets per leaf.

Although seeds spread by birds and livestock are probably the major cause for the rapid spread of Macartney rose, its ability to layer readily probably enables Macartney to persist and spread in some relatively unfavorable environments where seedlings would not survive.

Cuttings also can be a problem with Macartney rose. Whereas mowing helps keep down multiflora roses in managed pastures, it can accelerate the spread of Macartney plants if the cut canes are scattered and pressed into the soil by farm vehicles or livestock.

## Cherokee Rose

Cherokee rose (*Rosa laevigata* Mich.) has flowers 2 to 3 inches in diameter. Usually the petals are white but some have a pink tinge. The elongate hips range from about 1⅓ to 1½ inches in length. Characteristically the leaf has 3 leaflets but rarely may have 5. The species name, *laevigata* (polished), refers to the smoothness of the leaflet.

Stems of the Cherokee rose grow to 15 feet or more and form impenetrable clumps. Although this species reproduces by seed, root sprouting, and layering, the scattering of seed by birds is probably the major reason for its rapid spread.

Cherokee hybridizes with Macartney. The Cherokee–Macartney hybrid is sometimes confused with one or the other of its parents. However, it can usually be distinguished by its tendency to double flowering.

### Woods Rose

Woods rose (*Rosa woodsii* Lindl.) is a native species with stems that do not die back to the base each winter as some native roses do. It grows to a height of 6 feet or more. Each leaf has 5 to 11 leaflets, the usual range being from 5 to 7. The flowers are pink to whitish with 5 petals, and from 1 to 2 inches in diameter. Woods rose reproduces primarily by seeds.

## CONTROLLING WEED ROSES

Mowing, which keeps many weeds in check, is not sufficient to control established infestations of weed roses. In the case of Macartney and Cherokee, disturbing the plant may actually increase its tendency to spread. And although mowing retards the spread of multiflora in managed pastures, many stands are not mowed because they have gained too much headway, because they are located in terrain not suited to mowing, or because the land has been abandoned.

To help reduce the labor and frustration of trying to control weed roses by mechanical means alone, scientists have been investigating the effectiveness of various herbicides. For example, the Agricultural Research Service of the United States Department of Agriculture and the Fish and Wildlife Service of the Department of the Interior are conducting a joint study of multiflora and its control at the Patuxent (Md.) Wildlife Refuge. The Missouri Agricultural Experiment Station is also testing the effectiveness of various chemical treatments for controlling multiflora. And the Texas Agricultural Experiment Station has been conducting experiments on herbicidal control of Cherokee and Macartney roses. Similar studies are conducted in many States.

Studies conducted by ARS to date show that sprays containing either 2,4–D or 2,4,5–T or both are effective for controlling some weed roses when conditions permit their use—that is, when the herbicides can be used without damaging other broad-leaved plants.

In current experiments by ARS and state scientists, a new chemical, picloram (4–amino-3,5,6–trichloropicolinic acid), has shown excellent results when applied as sprays or in pellet or granular form as a ground treatment. However, picloram is registered only for use on rights–of–way and land not planted to crops. Further research must establish whether it is safe for general use before unrestricted recommendations can be made.

### *Caution in Use of the Chemicals*

These three herbicides are moderately toxic when taken internally by man or animals. Read the directions on the container label and heed all precautions.

Keep these herbicides in closed, well–labeled containers in a dry place and where they will not contaminate food and where children and pets cannot reach them. Apply these chemicals so as to avoid drift of the spray to nearby crops and livestock.

To protect fish and wildlife, do not clean spray equipment or dump excess spray material near lakes, streams, and ponds or otherwise contaminate such water.

Burn empty bags or cardboard containers in the open or bury them. Crush and bury bottles or cans in which the chemicals were packaged.

## Spray Treatments

The individual rose species vary in their susceptibility to 2,4–D and 2,4,5–T. For controlling Macartney, a 2,4–D spray is recommended, but for Cherokee rose, 2,4,5–T is more effective. For multiflora, a spray containing equal parts of 2,4–D and 2,4,5–T is more efficient, and for Woods rose, 2,4,5–T is best.

Low–volatile esters or oil–soluble, water–emulsifiable amine formulations of these herbicides are mixed in water at concentrations that will deliver the recommended per–acre dosage of herbicides. The first season you make an original treatment and, if necessary a second one, as follows:

| ROSE SPECIES | POUNDS PER ACRE OF HERBICIDE (Acid Equivalent) | | |
|---|---|---|---|
| | 2,4–D | 2,4,5–T | Total |
| Cherokee | 0 | 2 | 2 |
| Macartney | 2 | 0 | 2 |
| Multiflora | 1 | 1 | 2 |
| Woods | 0 | 2 | 2 |

A retreatment in succeeding years at one–half these rates should keep the roses under control.

Water–soluble amine formulations may be used for Macartney or Cherokee roses, but the herbicide concentration in the spray should be doubled and the spray mixture must contain 10 percent kerosene, diesel oil, or some other oil and ½ percent of dishwashing detergent on the basis of the total–spray volume.

The concentration of herbicide in the spray depends on the amount of spray to be delivered per acre. For example, the dilution may be 2 pounds of chemical in the total volume—usually ranging from 5 to 100 gallons.

The extent and age of the infestation determine the method of applying the spray. A low–pressure boom sprayer is efficient for treating a young or mowed infestation which will not obstruct movement of ground spraying equipment. When height and density of the rose clump make use of a boom sprayer impractical, the herbicides can be applied by airplane or helicopter or by using a handgun.

Spraying in the spring or early summer when the rose plants have reached full leaf or have started to produce flower buds gives best control. Spraying during the flowering period is also very effective, provided soil moisture is adequate for growth of the canes. *Caution:* If crops grown on fields adjacent to the rose infestation are susceptible to the herbicides, spraying will have to be done before the susceptible crops are planted or after they are harvested. In general, spraying should not be done when the temperature is above 85° F., to avoid generation of vapors which could drift and injure valuable plants.

In grassland infestations, best rose control is obtained if grazing is deferred during the period of lush growth. This gives the grass a better chance to compete with the roses. For establishing grasses quickly in rose–infested pastures, spring spraying is more effective than fall treatment.

Treatments usually have to be repeated to obtain and maintain good control. As soon after the first spraying as regrowth reaches full foliage, it should be retreated with the same herbicide and at the same rate as in the original application. In subsequent years, the regrowth should be treated when it reaches full foliage in the spring with a spray diluted to half the original herbicide concentration.

Clearing away or burning the dead canes from the preceding year makes retreatment easier and improves control. However, the canes should not be removed from the plant until 6 months after treatment. Earlier removal encourages new shoots to start growing before they normally would.

### General Directions for Spraying

General directions for applying sprays containing 2,4–D and 2,4,5–T with various types of equipment follow:

When a boom sprayer is used to control seedlings and young established weed roses in grass meadows and along roadsides and drainage ditches, the output and ground speed of the sprayer should be calibrated to deliver between 10 and 40 gallons of spray per acre.

When a high–pressure sprayer with handgun is used to penetrate established hedges or large isolated plants, a pressure between 100 and 200 pounds per square inch is required to wet all the foliage well. It is not necessary to drench the plants, however. Because of the large amounts of spray used to wet the leaves, a relatively weak spray concentration—2 pounds, acid equivalent, of herbicide in 100 gallons of water—will do the job efficiently.

When aerial spraying is used, the sprayer should be calibrated to deliver 5 to 10 gallons of spray per acre.

The hazard of drift in aerial spraying is minimized by using invert emulsions (those in which the herbicide is on the inside of the drop instead of the surface) or adding an agent that prevents formation of very fine droplets. Spray pilots know about these techniques.

## IN CONCLUSION

Weed roses are not as noxious as certain other weeds, such as wild morning glory in small–grain fields or the Canadian thistle, for which no effective controls have been found. However, intensified effort on the part of farmers in affected areas will be needed to prevent weed roses from migrating further. Controlling seedlings and young established rose plants is much cheaper and easier than reclaiming land that is heavily infested. Preventing migration of weed roses into orchards is especially important, since treatments recommended in this report may damage the fruit trees. Tillage is therefore the only control measure available to orchardists at present.

Because of the strong tendency of Macartney, Cherokee, Woods, and multiflora to spread, a farmer cannot ignore the weed potential of these roses when they are growing on or near his land or when he considers planting them for a living fence or wildlife cover.

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